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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : C08F 10/00, 2/00, 2/34, B01J 8/18, 8/38, 19/24

A1

(11) International Publication Number: WO 00/02929

(43) International Publication Date: 20 January 2000 (20.01.00)

(21) International Application Number: PCT/EP99/04722

(22) International Filing Date: 3 July 1999 (03.07.99)

(30) Priority Data:
98202280.8 8 July 1998 (08.07.98) EP

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(81) Designated States: AE, AU, AZ, BG, BR, CA, CN, CZ, HU, ID, IL, IN, JP, KR, KZ, MX, NO, PL, RO, RU, SG, SK, TM, TR, UA, US, VN, YU, ZA, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.

(54) Title: PROCESS AND APPARATUS FOR THE GAS-PHASE POLYMERISATION

(57) Abstract

A process for the gas-phase catalytic polymerisation carried out in two interconnected polymerisation zones, to which one or more monomers are fed in the presence of a catalyst under polymerisation conditions and from which the produced polymer is discharged. The growing polymer particles flow through a first polymerisation zone under fast fluidisation conditions, leave said first zone and enter a second polymerisation zone through which they flow in a densified form under the action of gravity, leave said second zone and are reintroduced into the first polymerisation zone, thus establishing a circulation of polymer between the two polymerisation zones. The present invention is characterised in that a gas of composition different from that present in the first polymerisation zone is introduced into the second polymerisation zone and it is avoided that the gases present in the first polymerisation zone are introduced into the second polymerisation zone. The process is particularly suited for obtaining in-reactor made blends of olefin polymers having different compositions.